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=> d his

     (FILE 'HOME' ENTERED AT 20:53:42 ON 01 FEB 2008)
     FILE 'CA' ENTERED AT 20:54:07 ON 01 FEB 2008
L1  642 S (VALIDAT? OR FAULT OR CORRUPT?)(6A)(SENSOR OR DETECTOR OR ELECTRODE
        OR MICROELECTRODE OR BIOSENS? OR BIO SENS? OR ANALY!ER OR
        BIOELECTRODE OR BIOANALY!ER OR BIOMICROELECTRODE)(6A)(DETECT? OR
        DETERMIN? OR TEST? OR ASSAY? OR MEASUR? OR MONITOR? OR EVALUAT? OR
        DISCERN?)
L2   25 S L1 AND (AC OR(ALTERNATING OR A OR OSCILLATING OR MODULAT?)(1W)
        (CURRENT OR C)(2A)(IMPED? OR POLAR? OR VOLTAM? OR COMPONENT OR
        RESPONSE OR SIGNAL OR POTENT? OR CONDUCT? OR RESISTI?) OR KHZ OR MHZ
        OR KILOHERTZ OR MEGAHERTZ OR (KILO OR MEGA)(W)(HERTZ OR HZ) OR
        FREQUENCY)
L3   17 S L1 AND (AC OR(ALTERNATING OR A OR OSCILLATING OR MODULAT?)(1W)
        (CURRENT OR C) OR KHZ OR MHZ OR KILOHERTZ OR MEGAHERTZ OR (KILO OR
        MEGA)(W)(HERTZ OR HZ))
L4   36 S L2-3
L5   24 S L4 AND PY<2004
L6    4 S L4 AND PATENT/DT
     FILE 'BIOSIS' ENTERED AT 20:55:42 ON 01 FEB 2008
L7    5 S L5
     FILE 'MEDLINE' ENTERED AT 20:56:11 ON 01 FEB 2008
L8   10 S L5
     FILE 'CA, BIOSIS, MEDLINE' ENTERED AT 20:57:07 ON 01 FEB 2008
L9   34 DUP REM L5 L6 L7 L8 (9 DUPLICATES REMOVED)

=> d bib,ab l9 1-34

L9   ANSWER 14 OF 34  CA  COPYRIGHT 2008 ACS on STN
AN   132:95184  CA
TI   Sensor Fault Detection Using Noise Analysis
AU   Ying, Chao-Ming; Joseph, Babu
CS   Department of Chemical Engineering, Washington University, St. Louis,
     MO, 63130, USA
SO   Industrial & Engineering Chemistry Research (2000), 39(2), 396-407
AB   The feasibility of sensor fault detection using noise anal. is
     evaluated.  The noise powers at various frequency bands present in the
     sensor output are calcd. using power spectrum d. estn. and compared with
     historically established noise pattern to identify any abnormalities.
     The method is applicable to systems for which the noise is stationary
     under normal operating conditions.  Principal component anal. (PCA) is
     used to reduce the space of secondary variables derived from the power
     spectrum.  T2 statistics is used to detect deviations from the norm.  We
     take advantage of the low-pass filtering characteristics exhibited by
     most process plants and closed-loop control systems, which allows the
     noise power at higher frequency bands to be used in the fault detection.
     The algorithm does not require a process model because it focuses on
     characterization of each individual sensor and the measurement it
     generates.  Exptl. studies with two kinds of garden variety sensors (off
     the shelf temp. and pressure sensors) are used to validate the
     feasibility of the proposed approach.
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L9 ANSWER 19 OF 34 CA COPYRIGHT 2008 ACS on STN
AN 128:103928 CA
TI Sensor Fault Detection via Multiscale Analysis and Nonparametric Statistical Inference
AU Luo, Rongfu; Misra, Manish; Qin, S. Joe; Barton, Randall; Himmelblau, David M.
CS Department of Chemical Engineering, University of Texas, Austin, TX, 78712, USA
SO Industrial & Engineering Chemistry Research (1998), 37(3), 1024-1032
AB Sensor validation is a topic of widespread importance. A new approach to sensor validation in real time is described that is based on (1) representation of the sensor signal by wavelets, (2) decompn. of the signal into different frequency ranges, (3) calcn. of useful features of the signal at different frequencies, and (4) diagnosis of faulty operation via nonparametric statistical tests. The proposed strategy is able to isolate the effect of noise and process changes from the effects of phys. changes in the sensor itself. To clarify the circumstances under which the above strategy could be used, a noisy signal from a simulated thermocouple in a dynamic continuous nonlinear unsteady state stirred tank reactor (CSTR) was analyzed. Faults were introduced into the thermocouple, and the diagnosis was carried out. The results of the diagnosis indicated that the proposed strategy had low type I (false alarm) and type II (failure to detect faults) errors and was distinctly better than a std. test for changes in a nonstationary signal of unknown characteristics.

L9 ANSWER 33 OF 34 CA COPYRIGHT 2008 ACS on STN
AN 77:85298 CA
OREF 77:14057a,14060a
TI Fault sensing instrumentation
IN Blackmer, David E.
PA Instrumentation Laboratory, Inc.
SO U.S., 7 pp.
PI US 3661748 A 19720509 US 1970-27197 19700407
PRAI US 1970-27197 A 19700407
AB The electrochem. sensor system (to sense pH, pO2, and pCO2 values in blood samples) includes an electrode system for disposition in a conducting fluid that is arranged to produce a dc signal as a function of a parameter of interest sensed by the electrode system. There is dc circuitry responsive to the dc signal from the electrode system for producing an output indicative of the parameter of interest sensed by the electrode system. The system for detecting a sensor fault consists of a means for providing an elec. connection to the conducting fluid, means to apply an ac signal to the elec. connection, an ac signal detector connected to the dc circuitry, and a threshold circuit responsive to the output of the ac signal detector for providing an output signal indicative of a fault in the electrochem. sensor system when the ac signal detector has an output that differs by a predetd. amt. from a normal value.

=> log y
STN INTERNATIONAL LOGOFF AT 20:57:35 ON 01 FEB 2008